

# Ningbo Sinovat Auto Parts Co., Ltd.

**January 10, 2016**

RDW rijksdienst voor het wegverkeer  
Certification and Supervision  
Europaweg 205  
2700 AT Zoetermeer  
The Netherlands

Subject for ECE-type approval

Dear Sir:  
We hereby apply for type approval according to:

Function	ECE approval number	EEC approval number
LED rear grouped lamp	E4-10R-053502 Ext.00	---

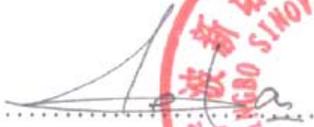
Trade name or trade mark : NOREP or SafeRoad or SNV or Togood

Manufacturer's name for type of device : ST14

Name and address of manufacturer : Ningbo Sinovat auto parts Co., Ltd.  
No.57 Yangming East Road  
Yuyao, 315400, Zhejiang  
P.R. China

We herewith declare that we have not applied and will not apply for approval with another Contracting Party of the ECE for the same type of product. Nor has any other member state granted a corresponding approval.

Sincerely

Signature:   
Name: Mr. Claude Séban / General Manager



**THE NETHERLANDS**  
( N E D E R L A N D )**COMMUNICATION**Concerning <sup>(1)</sup>:

- approval granted
- ~~approval extended~~
- ~~approval refused~~
- ~~approval withdrawn~~
- ~~production definitely discontinued~~

of a type of ~~electrical~~/electronic sub-assembly <sup>(1)</sup> with regard to Regulation number 10.**Approval number: E4-10R-053502****Extension number: 00**

1. Make (trade name of manufacturer) : NOREP or SafeRoad or SNV or Togood
2. Type and general commercial description(s) : ST14
3. Means of identification of type, if marked on the vehicle/component/~~separate technical unit~~ <sup>(1)</sup> : Moulded on the housing of the lamp
- 3.1. Location of that marking : refer to page 4 of information folder
4. Category of vehicle : not applicable
5. Name and address of manufacturer : Ningbo Sinovat Auto Parts Co., Ltd.  
No.57 Yangming East Road Yuyao,  
315400, Zhejiang, P.R. China
6. In the case of components and separate technical units, location and method of affixing of the approval mark : Same as item 3.
7. Address(es) of assembly plant(s) : ---
8. Additional information (where applicable) : See Appendix



9. Technical service responsible for carrying out the tests : TÜV Rheinland Kraftfahrt GmbH  
Technologiezentrum Verkehrssicherheit  
Am Grauen Stein  
D-51105 Köln (Poll)
10. Date of test report : January 30, 2016
11. Number of test report : 87-R10-141/16-00
12. Remarks (if any) : See Appendix
13. Place : Zoetermeer
14. Date : 17-MAR-2016
15. Signature :   
  
L. Vellekoop
16. The index to the information package lodged with the approval authority, which may be obtained on request, is attached.
17. Reasons for extension : not applicable

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<sup>(1)</sup> Strike out what does not apply.

## APPENDIX

## to type-approval communication form number: E4-10R-053502, Extension number: 00

concerning the type-approval of an ~~electrical~~/electronic sub-assembly <sup>(1)</sup> under Regulation number 10.

1. Additional information
  - 1.1. Electrical system rated voltage : 12V~~pos./neg.~~ ground <sup>(1)</sup>
  - 1.2. This ESA can be used on any vehicle type with the following restrictions : no restrictions
    - 1.2.1. Installation conditions, if any : connected to the battery of the vehicle
  - 1.3. This ESA can be used only on the following vehicle types : no restrictions
    - 1.3.1. Installation conditions, if any : no restrictions
  - 1.4. The specific test method(s) used and the frequency ranges covered to determine immunity were : ISO 11452-4 3rd edition: 2005  
Bulk current injection testing method (from 20 to 400MHz)  
  
ISO 11452-2 2nd edition: 2004  
Free field testing method (from 400 MHz to 2000MHz)
  - 1.5. Laboratory accredited to ISO 17025 and recognized by the Approval Authority responsible for carrying out the tests : TÜV Rheinland Kraftfahrt GmbH  
Technologiezentrum Verkehrssicherheit  
Am Grauen Stein  
D-51105 Köln (Poll)
2. Remarks : not applicable

<sup>(1)</sup> Strike out what does not apply.



	Appendix 1 to INFORMATION DOCUMENT NO. ST14-EMC-00 <b>Description of the ESA</b>	Page: 1
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1. Make (trade name of manufacturer) : NOREP or SafeRoad or SNV or Togood
2. Type : ST14 (LED rear grouped lamp)
3. Means of identification of type, if marked on the component/~~separate technical unit~~<sup>1)</sup> : Moulded on the housing of the lamp
  - 3.1. Location of that marking : Refer to page 4 of this information folder
4. Name and address of manufacturer : Ningbo Sinovat auto parts Co., Ltd.  
No.57 Yangming East Road  
Yuyao, 315400, Zhejiang  
P.R. China  
  
Name and address of authorized representative, if any : Not applicable
5. In the case of components and separate technical units, location and method of affixing of the approval mark : Moulded on the housing of the lamp  
Refer to page 4 of this information folder
6. Address (es) of assembly plant(s) : Same as above item 4.
7. This ESA shall be approved as a : Component ~~STU~~
8. Any restrictions of use and conditions for fitting : No restrictions
9. Electrical system rated voltage : DC 12V, negative ground

Appendix 1:

Description of the ESA chosen to represent the type (electronic block diagram and list of main component constituting the ESA (e.g. make and type of microprocessor, crystal, etc.).

List of contents

Appendix 1	Description of the ESA	page 2
Attachment 1	Photo and drawing of the ESA	page 3 to 5
Attachment 2	Photo of the PCB	page 6 to 9
Attachment 3	Electric Circuit Diagram	page 10
Attachment 4	Bill of Materials	page 11



	Appendix 1 to INFORMATION DOCUMENT NO. ST14-EMC-00 <b>Description of the ESA</b>	Page: 2
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This information document consists of pages 1 to 12 including Appendix and Attachments.

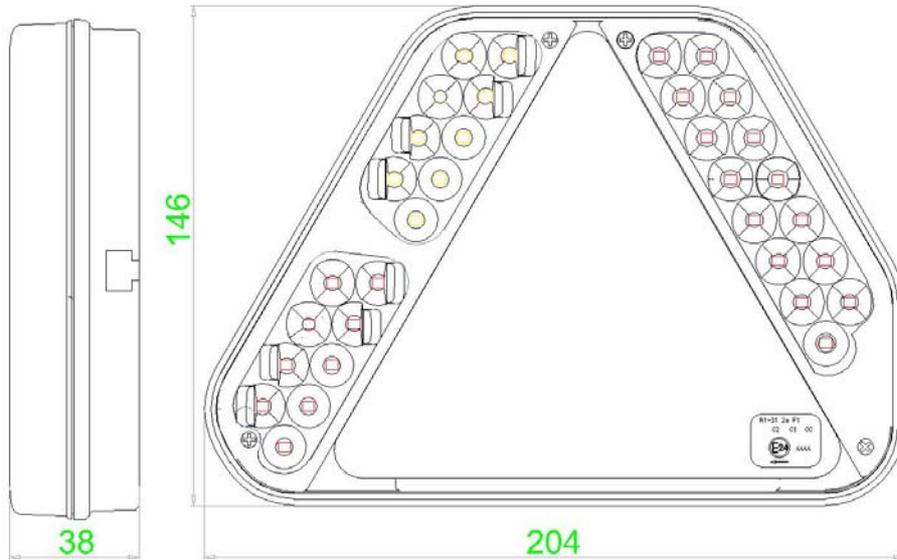
1. Input range : DC 12V, negative ground
2. Consumption power : Rear direction indicator: 2×9LEDs, 2×1.8W  
Rear position/stop lamp: 2×9LEDs, 2×0.2W/1.8W  
Reversing lamp: 8LEDs, 1.1W  
Rear fog lamp: 15LEDs, 2.4W  
Rear registration plate lamp: 2×18LEDs, 2×2.0W
3. Resource of X-tal or oscillator : No
4. Main dimensions : 2 × (204mm × 146mm × 38mm)



**Photo and drawing of the ESA**

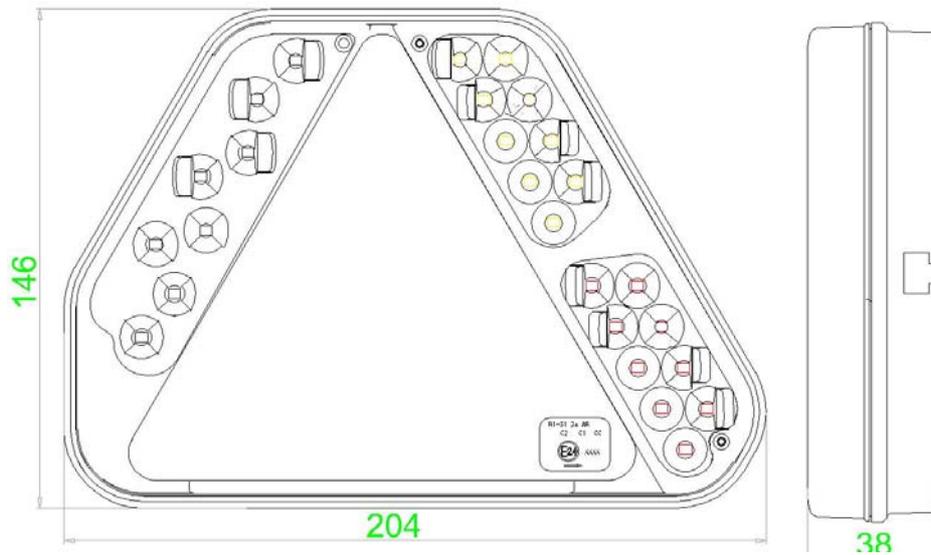
**Side View (Left device)**

**Front View (Left device)**



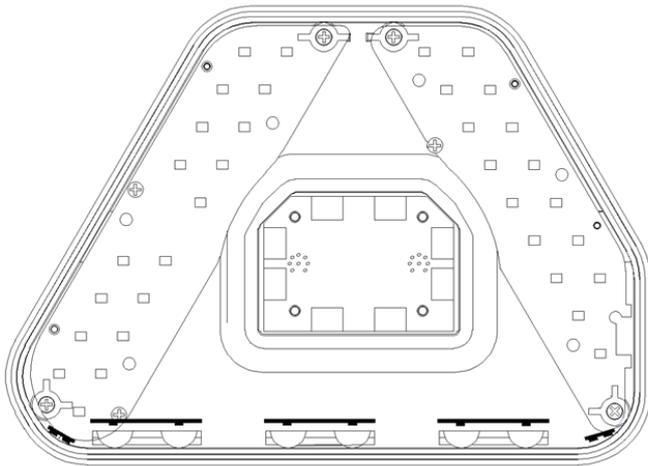
**Front View (Right device)**

**Side View (Right device)**

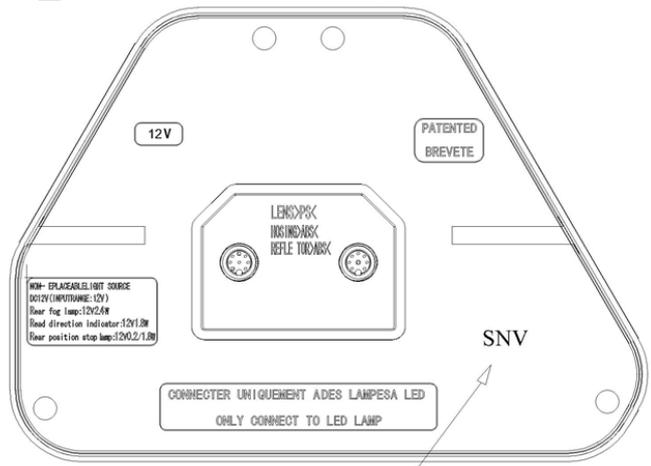


**Photo and drawing of the ESA**

Inside View (Left device)

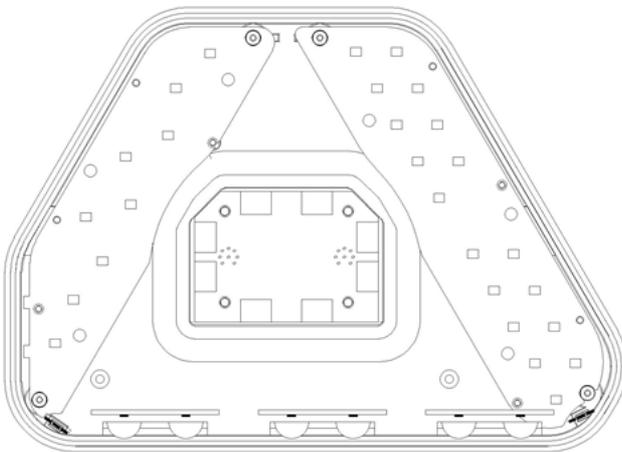


Back View (Left device)

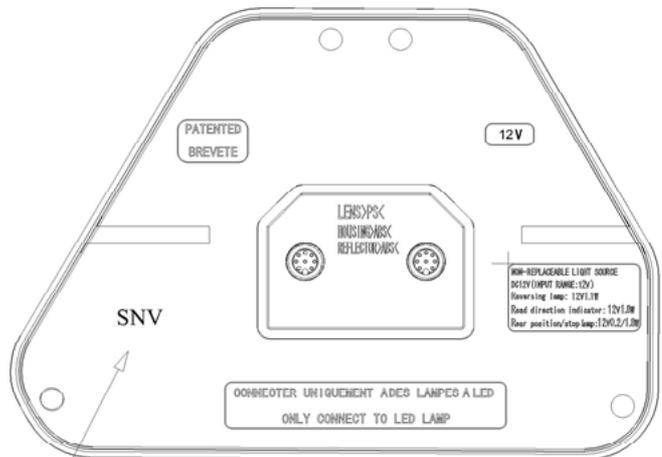


Position of  
Trade Mark

Inside View (Right device)



Back View (Right device)



Position of  
Trade Mark



**Photo and drawing of the ESA**

**Front view**



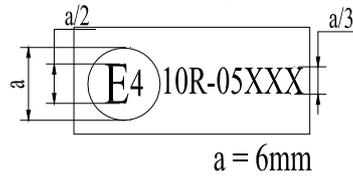
**Back view**

Position of E-mark  
and type designation



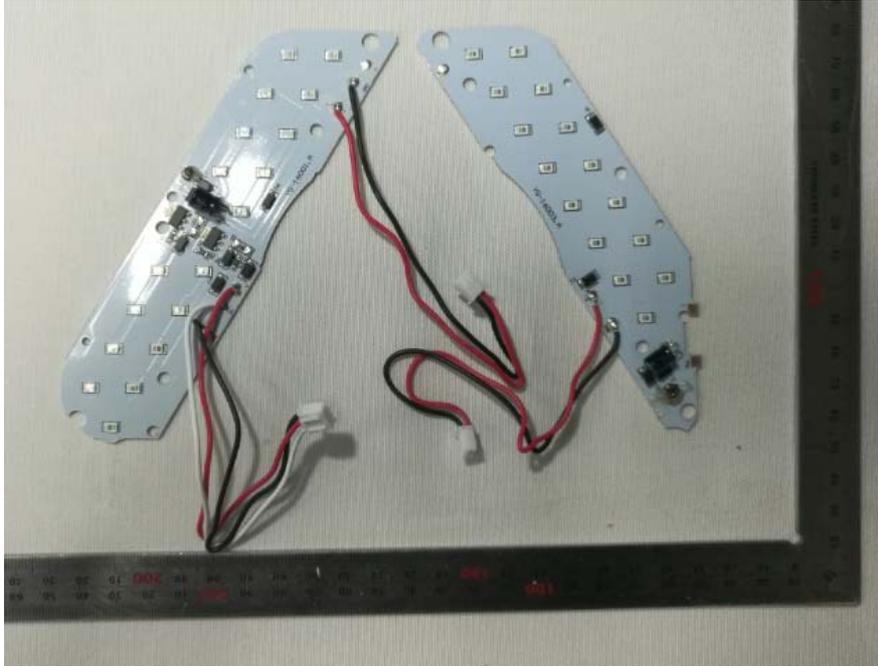
Position of E-mark  
and type designation

**E-mark designation**

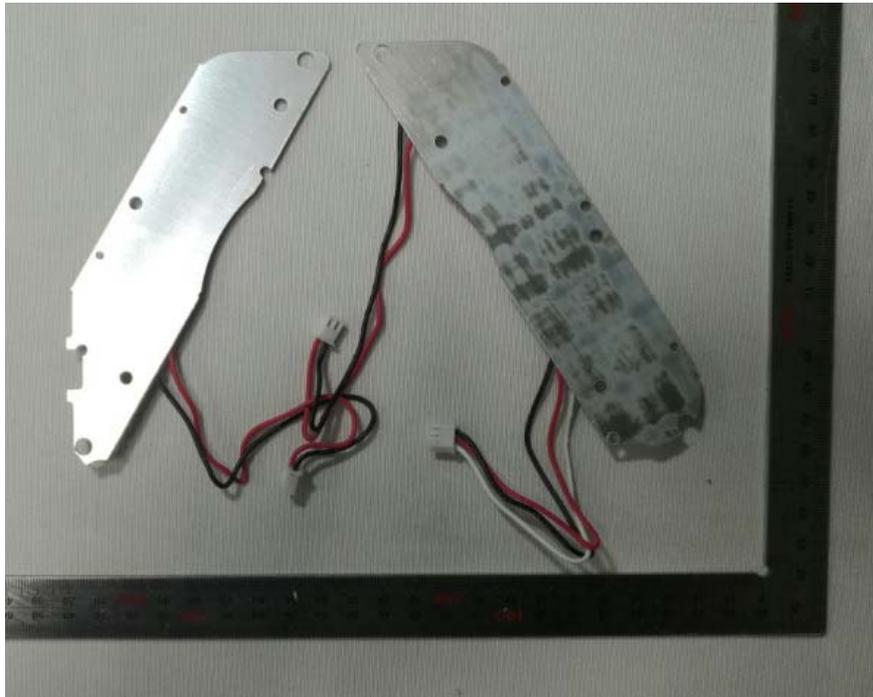


**Photo of the PCB**

Front view of PCB for rear direction indicator, rear fog lamp, rear position and stop lamp

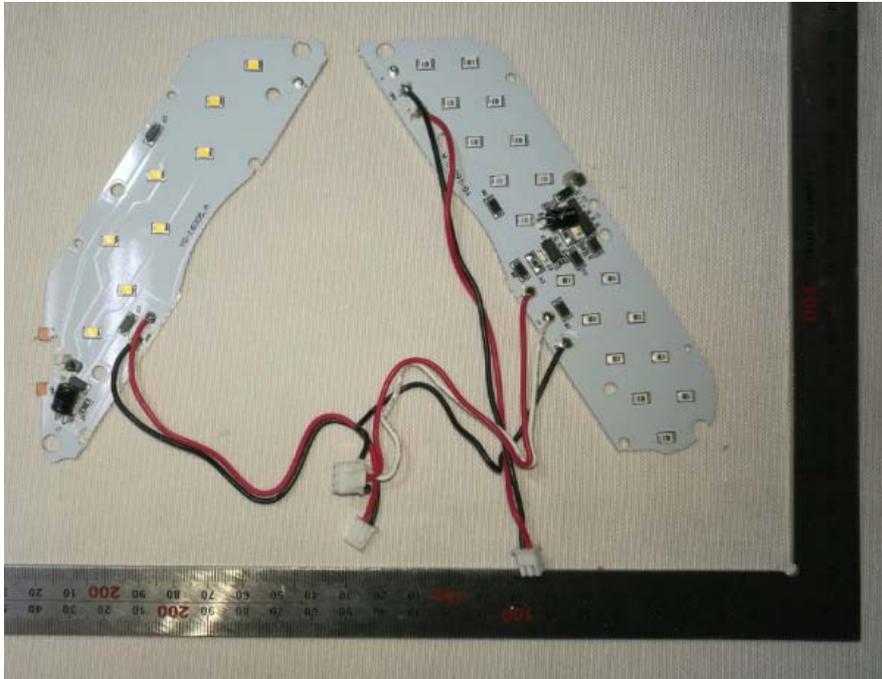


Back view of PCB for rear direction indicator, rear fog lamp, rear position and stop lamp



**Photo of the PCB**

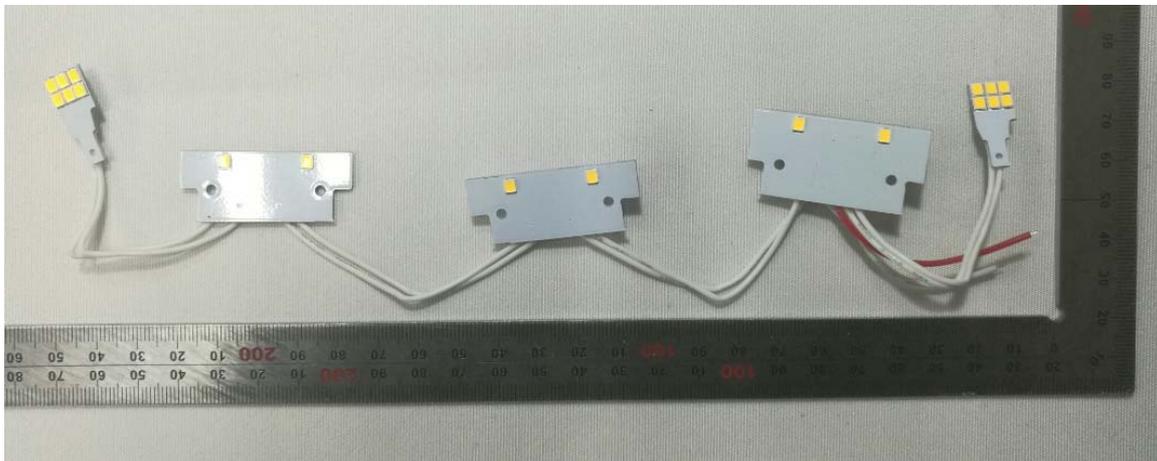
Front view of PCB for rear direction indicator, reversing lamp, rear position and stop lamp



Back view of PCB for rear direction indicator, reversing lamp, rear position and stop lamp



Front view of PCB for rear registration plate lamp

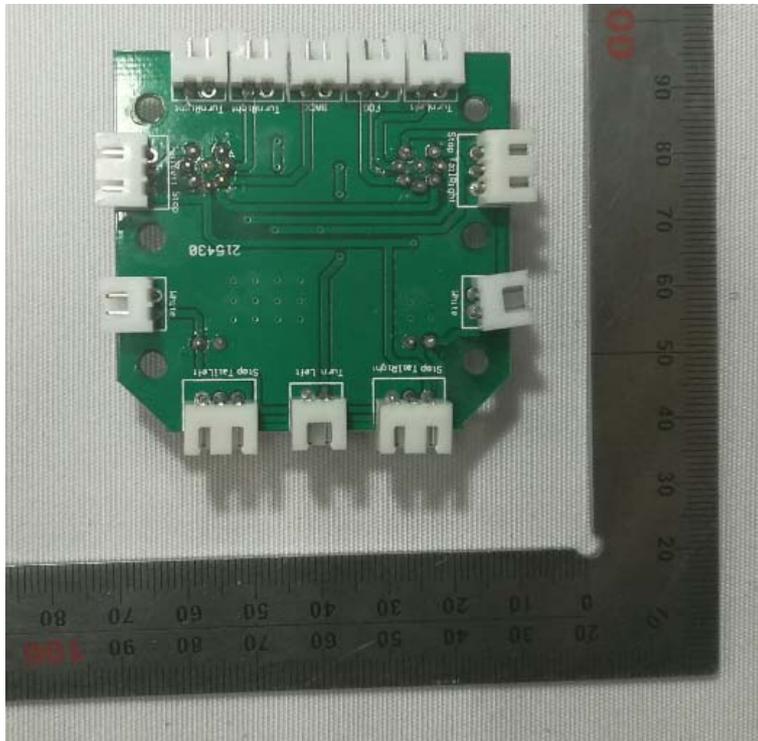


Back view of PCB for rear registration plate lamp

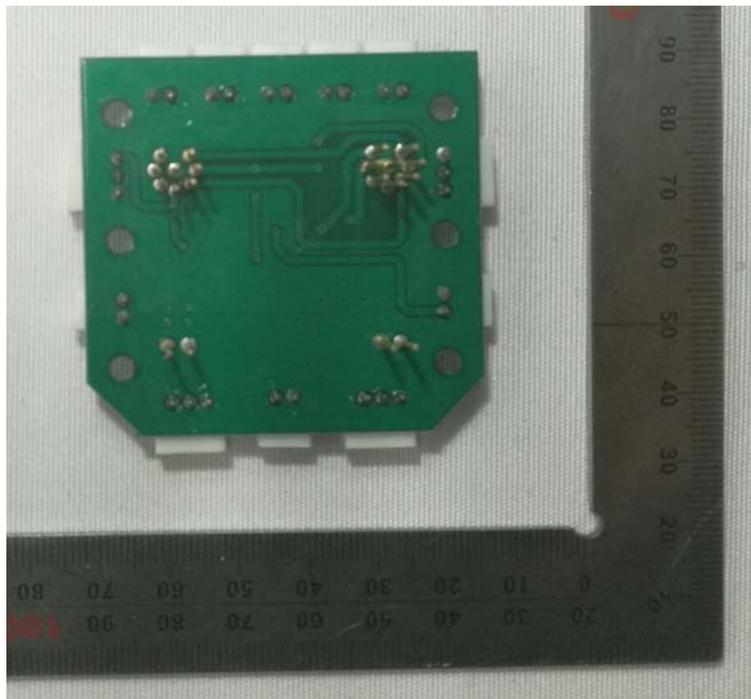


**Photo of the PCB**

Front view of PCB for center control plate

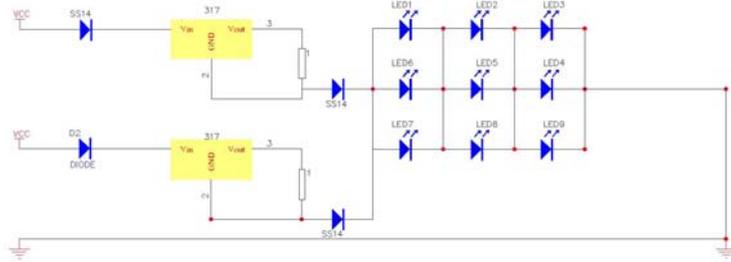


Back view of PCB for center control plate

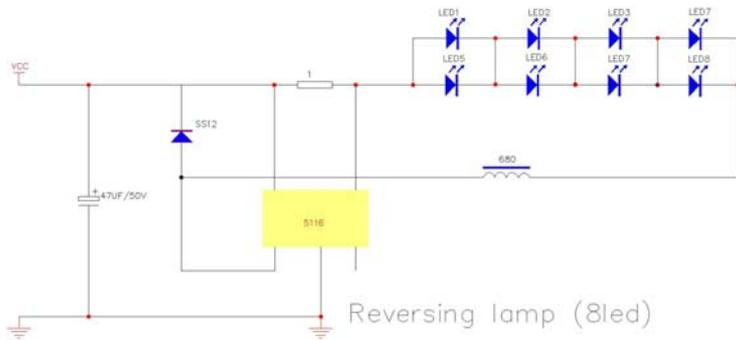


**Electric Circuit Diagram**

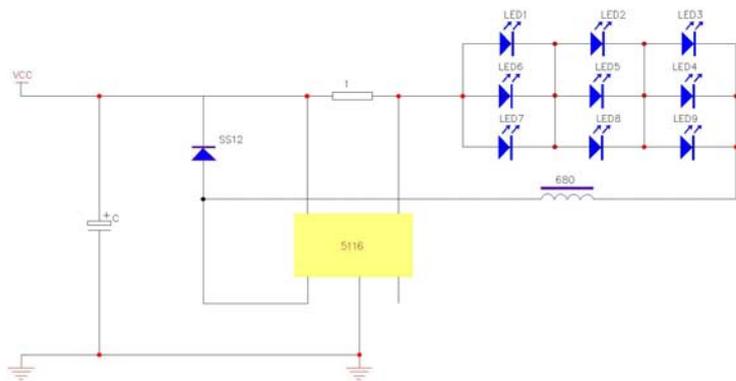
**Circuit diagram**



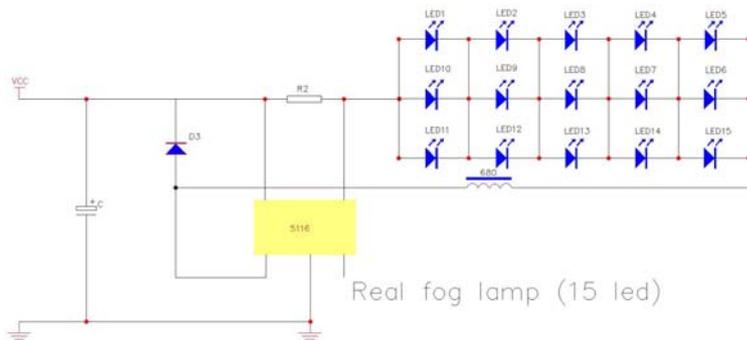
Real Position and Stop lamp(9led)



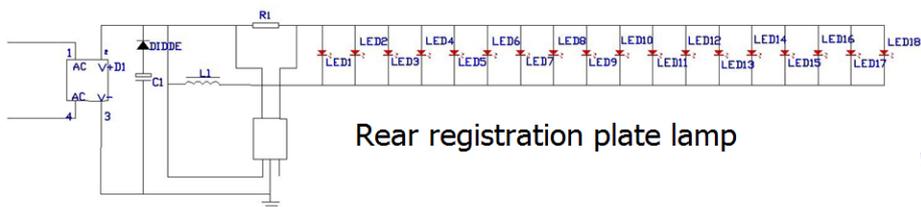
Reversing lamp (8led)



Real Direction indicator (9led)



Real fog lamp (15 led)



Rear registration plate lamp



<b>BILL OF MATERIALS</b>				
No.	Description	Amount	Unit	Remark
1	Outer Lens (PC: Clear)	2	PCS	---
2	Inter Lens (PC: Clear)	6	PCS	---
3	Reflector (ABS)	4	PCS	---
4	Housing (ABS)	2	PCS	---
5	Retro-reflector (PC: Red)	2	PCS	---
6	PCB	16	PCS	Integrated circuit plate
7	Chip LED, Amber	18	PCS	2×(yellow1~yellow9)
8	Chip LED, Red	33	PCS	2×(red1~red9), red1~red15
9	Chip LED, White	44	PCS	white1~white8, 2×(white1~white18)
10	Chip resistor 0R/1206	8	PCS	R1/R4/R5
11	Chip resistor 6R/1206	2	PCS	R2
12	Chip resistor 62R/1206	2	PCS	R3
13	Chip diode SS14	20	PCS	d
14	Electrolytic capacitor 47 μ F/50V	6	PCS	C1
15	SMD Inductor 680K/127	6	PCS	L1
16	IC LM317/SOT89-5	2	PCS	ic
17	Chip Voltage YC5116/U1	6	PCS	---



Type : ST14  
Manufacturer : Ningbo Sinovat Auto Parts Co., Ltd.

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## TEST REPORT

according to ECE-Regulation

**Uniform provisions concerning the approval of vehicles  
with regard to electromagnetic compatibility**

### ECE-R10

including all amendments until  
05 series of amendments

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Approval Status

UNECE approval : E4-10R-053502 Ext.00

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Structure of the Test Report

Item No.

0. General information
  1. Tested vehicle(s) / object(s)
  2. Test record
  3. List of appendices
  4. Statement of conformity
- 

The Test Report shall be reproduced and published in full by the client only. It shall however be reproduced partially with the written permission of the Testing Laboratory only.



Type : ST14  
 Manufacturer : Ningbo Sinovat Auto Parts Co., Ltd.

## 0. General information

- 0.1. Make (trade name of the manufacturer) : NOREP or SafeRoad or SNV or Togood
- 0.2. Type : ST14
- 0.3. Category of vehicle : Not applicable
- 0.4. Name and address of the manufacturer : Ningbo Sinovat Auto Parts Co., Ltd.  
 No.57 Yangming East Road Yuyao,  
 315400, Zhejiang, P.R. China
- 0.5. No. of the information folder : ST14-EMC-00  
 - Date of issue : January 10, 2016  
 - Date of last change : Not applicable

## 1. Tested vehicle(s)/ object(s)

- 1.1. Description
- 1.1.1. ~~Vehicle~~ object
- Commercial description : LED rear grouped lamp
- Type(s) ~~variant(s)~~ / ~~version(s)~~ : ST14
- Identification number : See Appendix 1
- 1.1.2. Condition of ~~vehicle(s)~~ / Object(s) : New / ~~used~~ / ~~pretested~~
- 1.2. Worst case selection : The determination of worst case scenario was done according QMA 1.301.005, section 6.2.2.2.
- 1.3. Remarks : The results of the test refer exclusively to the object(s) mentioned under point 1.1 of this report.



Type : ST14  
 Manufacturer : Ningbo Sinovat Auto Parts Co., Ltd.

## 2. Test record

- 2.1. Equipment for measuring and testing : The test facilities / measurement equipment used were in compliance with the test requirements
- 2.1.1. Specifications for the test site : Not applicable
- 2.2. Test results
- Remark concerning extension : ~~The ESA has been tested according the amendments mentioned in Appendix 0.~~  
~~The actual measurement test of the ESA was not re-quired.~~  
~~The test result of the previous test are still valid.~~
- 2.2.1. General requirements
- 2.2.2. Test results – radiated narrowband electromagnetic emissions : The requirements of the standards are met (Test data see Appendix 1)
- 2.2.3. Test results – radiated broadband electromagnetic emissions : The requirements of the standards are met (Test data see Appendix 1)
- 2.2.4. Test results – Immunity to electromagnetic radiation : The requirements of the standards are met (Test data see Appendix 1)
- 2.2.5. Test results – conducted Emission : The requirements of the standards are met (Test data see Appendix 1)
- 2.2.6. Test results – immunity to conducted transients : The requirements of the standards are met (Test data see Appendix 1)
- 2.3. Additional information
- The results of the test refer exclusively to the object(s) mentioned under point 1.1. of this report.
- Test site : COMPLIANCE CERTIFICATION SERVICES (SHANGHAI) INC.  
 JIADING, SHANGHAI, CHINA
- Test date : January 19, 2016 to January 26, 2016
- 2.4. Remarks : Not applicable



Type : ST14  
Manufacturer : Ningbo Sinovat Auto Parts Co., Ltd.

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### 3. List of Appendices

Appendix 0 : List of modifications  
Appendix 1 : Test protocol

### 4. Statement of conformity

The in point 0.5. mentioned information folder and the type described in that comply with the requirements mentioned on page 1.

With regard to the required level of performance to be achieved, the tested items were representative for the type to be approved (see point 1.2).

The mentioned test results refer to the ~~vehicle(s)~~ object(s) described under point 1.1 of this report.

Engineering centre Shanghai / January 30, 2016  
HH



Heng Huang  
Expert Technical Service



Type : ST14  
Manufacturer : Ningbo Sinovat Auto Parts Co., Ltd.

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List of modifications

Appendix 0

Correction of : ---

Modification of : ---

Addition of : ---

Deletion of : ---



Type : ST14  
Manufacturer : Ningbo Sinovat Auto Parts Co., Ltd.

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**Test protocol****Appendix 1****Test object**

Trade name : NOREP or SafeRoad or SNV or Togood

Type(s) / variant(s) / version(s) : ST14

**Technical data of the tested ESA type**

Electrical system rated voltage : 12V DC, negative ground

This ESA can be used on any vehicle type  
with the following restrictions : No restriction

Installation conditions : Connected to the battery of the vehicle

This ESA can be used on the following  
vehicle types : No restriction

Installation conditions : No restriction



Type : ST14  
 Manufacturer : Ningbo Sinovat Auto Parts Co., Ltd.

## Test results

### 1. Radiated narrow band / broadband electromagnetic emissions:

Radiated broadband electromagnetic emissions : as shown in table 1

Radiated narrowband electromagnetic emissions : as shown in table 2

Antenna position : horizontal and vertical

Rated voltage : DC 12V

Maximum broadband QP value (table 1):

Frequency (MHz)	Test results (dB $\mu$ V/m)		Reference QP Limit (dB $\mu$ V/m)	Margin to QP reference value (dB $\mu$ V/m)
	hor.	vert.		
167.16	46.8	---	57.3	10.5
166.89	---	43.4	57.3	13.9

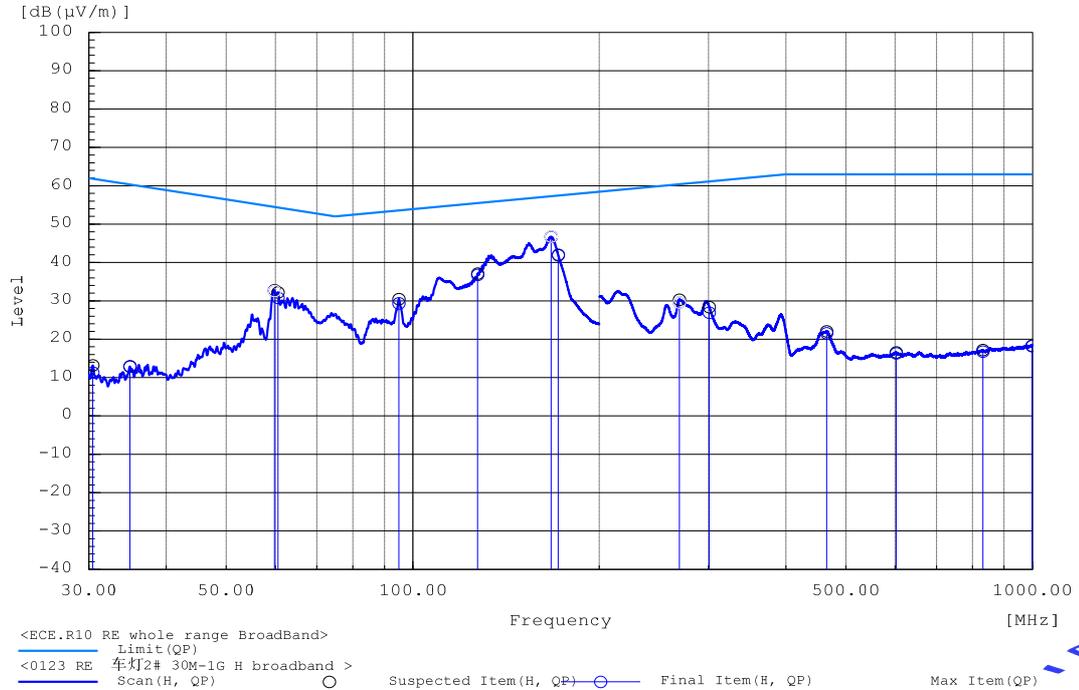
Maximum narrowband AV value (table 2):

Frequency (MHz)	Test results (dB $\mu$ V/m)		Reference AV Limit (dB $\mu$ V/m)	Margin to reference value (dB $\mu$ V/m)
	hor.	vert.		
167.00	40.1	---	47.3	7.2
167.14	---	36.6	47.3	10.7

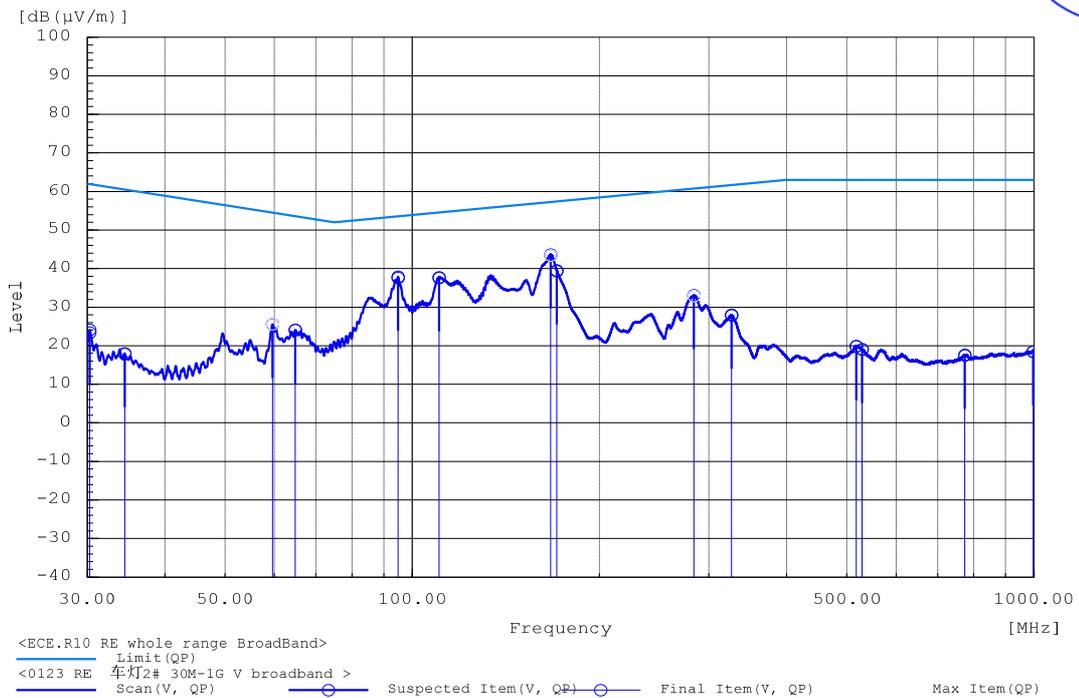


Type : ST14  
 Manufacturer : Ningbo Sinovat Auto Parts Co., Ltd.

Horizontal Polarity Test Result Diagram (Broadband)

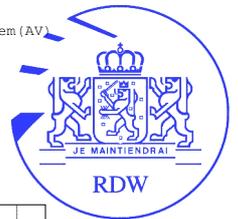
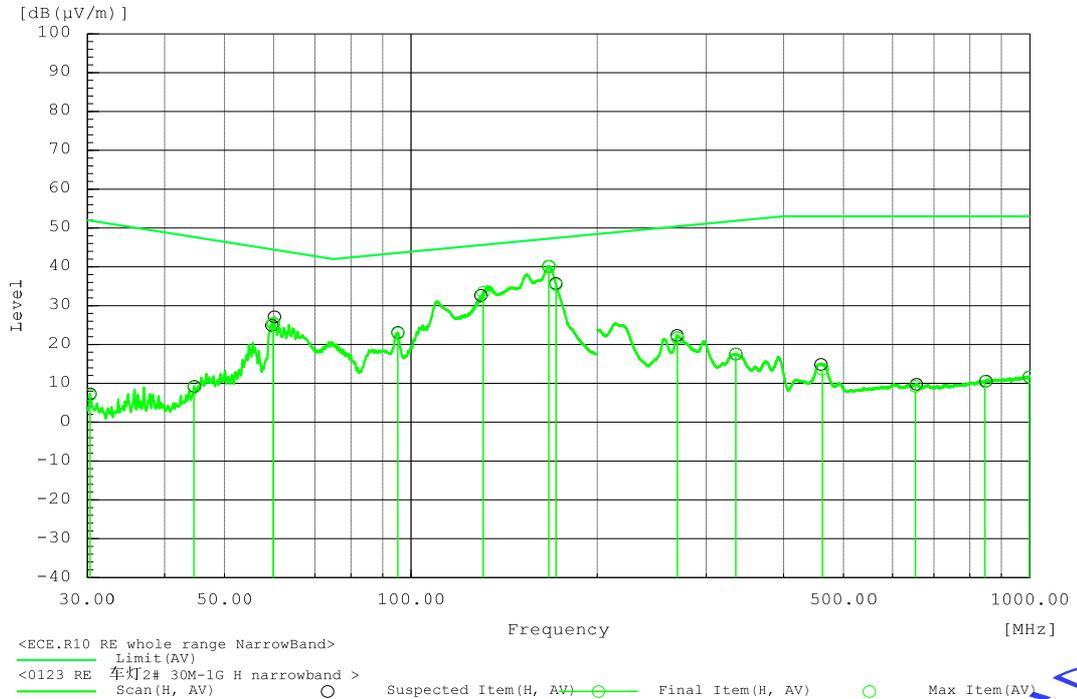


Vertical Polarity Test Result Diagram (Broadband)

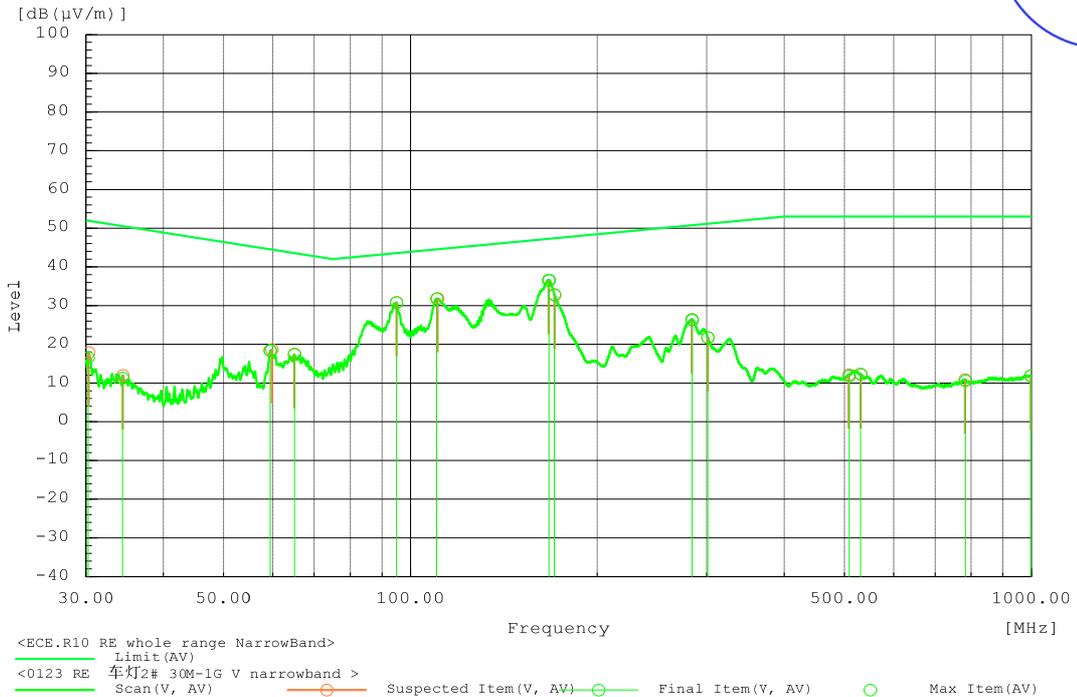


Type : ST14  
 Manufacturer : Ningbo Sinovat Auto Parts Co., Ltd.

Horizontal Polarity Test Result Diagram (Narrowband)



Vertical Polarity Test Result Diagram (Narrowband)



Type : ST14  
 Manufacturer : Ningbo Sinovat Auto Parts Co., Ltd.

## 2. Conducted emissions

Test method : ISO 7637-2 2nd edition: 2004

Polarity of pulse amplitude	Maximum allowed value for vehicles with 12V systems	Measured Pulse amplitude True value
Positive	+ 75	+ 1.1 V
Negative	- 100	- 11.7 V

## 3. Immunity to electromagnetic radiation

Test method : ISO 11452-4 3rd edition: 2005  
 Bulk current injection testing method (from 20 to 400MHz)

ISO 11452-2 2nd edition: 2004  
 Free field testing method (from 400 MHz to 2000MHz)

Measurement result:

Frequency range (MHz)	Test level	Type of modulation	Test distance	Antenna position	Result
20~400	60mA	AM, 80%	150mm	/	Passed*
400~800	30volts/m	AM, 80%	1 m	Vertical	Passed*
800~2000	30volts/m	PM, 577µs	1 m	Vertical	Passed*

Remark:

\* no degradation of performance of 'immunity-related functions'.



Type : ST14  
 Manufacturer : Ningbo Sinovat Auto Parts Co., Ltd.

#### 4. Immunity to transient disturbances

Test method : ISO 7637-2 2nd edition: 2004

Measurement result:

Test pulse	Test level	Number of pulse / test time	Burst cycle / pulse repetition time	Required minimum function status*	Status of function true value	Result
1	-75V	5000 pulses	0.5s	C	C	Passed
2a	+37V	5000 pulses	0.2s	B	A	Passed
2b	+10V	10 pulses	0.5s	C	C	Passed
3a	-112V	1 h	90ms	A	A	Passed
3b	+75V	1 h	90ms	A	A	Passed
4	-6V	1 pulse	N/A	C	C	Passed

#### Remark:

\* Class A: all functions of a device/system perform as designed during and after exposure to disturbance.

Class B: all functions of a device/system perform as designed during exposure. However, one or more of them can go beyond specified tolerance. All functions return automatically to within normal limits after exposure is removed. Memory functions shall remain class A.

Class C: one or more functions of a device/system do not perform as designed during exposure but return automatically to normal operation after exposure is removed.

Class D: one or more functions of a device/system do not perform as designed during exposure and do not return to normal operation until exposure is removed and the device/system is reset by simple "operator/use" action.

Class E: one or more functions of a device/system do not perform as designed during and after exposure and cannot be returned to proper operation without repairing or replacing the device/system.

